

AMENDMENTS TO THE CLAIMS

1-7. (Canceled)

8. (Currently Amended) A flow-control method for data traffic transmitted through a synchronous digital hierarchy (SDH) network, comprising:

creating and encapsulating, during data transmission through said SDH network, one or more line flow-control protocol (LFP) frames, according to a data volume of a frame cache of a first Ethernet over SDH/SONET (EoS) device coupled to said SDH network, wherein if the data volume exceeds an upper threshold of the frame cache, the created LFP frames contain a control field which controls to stop sending data, and if the data volume is lower than a lower threshold of the frame cache, the created LFP frames contain a control field which controls to start sending data, and wherein each LFP frame is mapped to an SDH payload as a common data frame;

transferring said one or more LFP frames to a second EoS device coupled to said SDH network;

demapping the SDH payload at said second EoS device;

identifying said one or more LFP frames at said second EoS device; and

interpreting and executing flow-control information contained in said one or more LFP frames at said second EoS device;

wherein an LFP transparent pattern is used when said second EoS device identifies and processes an LFP frame; and

wherein said second EoS device interprets and executes said LFP frames according to whether a user device coupled to said second EoS device supports full duplex, wherein:

if said user device works in full duplex mode, it is unnecessary to interpret the LFP frames, and the LFP frames are sent directly to said user device; and

if said user device works in half duplex mode, the control field of each LFP frame is interpreted, wherein if the control field controls to start sending, a back pressure control signal will be cancelled, and otherwise, the back pressure control signal will be sent to make said user device detect a conflict and stop transmitting data.

9. (Previously Presented) The flow-control method according to claim 8, wherein said creating and encapsulating comprises:

continuing to monitor said data volume in an uplink direction in said frame cache of said first EoS device;

inserting said control field into each of said one or more LFP frames, said control field being based upon said data volume in said frame cache, wherein:

if said data volume exceeds said upper threshold, said encapsulating includes periodically sending LFP frames whose control field controls to stop sending;

if said data volume falls below said lower threshold, said encapsulating includes periodically sending LFP frames whose control field controls to start sending; and

if said data volume falls between said upper threshold and said lower threshold, said encapsulating does not send LFP frames; and

wherein said one or more LFP frames are inserted at the head of a data queue for encapsulation and are given priority, and wherein if there are no Ethernet frames being encapsulated, the LFP frames are immediately encapsulated, and otherwise, the LFP frames are encapsulated immediately after current Ethernet frames are encapsulated.

10. (Canceled)

11. (Previously Presented) The flow-control method according to claim 9, wherein if said data volume exceeds said upper threshold, the control field will contain 0x0FFFFH, and if said data volume falls below said lower threshold, the control field will contain 0x0H; and wherein said control field is controlled in an Xon/Xoff fashion.

12. (Previously Presented) The flow-control method according to claim 8, wherein a carrier for LFP frames is configured according to a standard IEEE 802.3x PAUSE frame structure.

13.-15. (Canceled)

16. (Currently Amended) The flow-control method according to claim [[15]] 8, wherein when said user device coupled to said second EoS device stops sending data to said second EoS device, the data volume in the data cache of said first EoS device decreases gradually;

wherein when the data volume in the data cache of said first EoS device reaches said lower threshold, the first EoS device generates at least one LFP frame having a control field to start sending; and

wherein said LFP frames are given priority for decapsulation at said second EoS device to interpret and execute flow-control to control the user device coupled to said second EoS device to send data again.

17.-24. (Canceled)

25. (Currently Amended) A flow-control method for data traffic transmitted through a synchronous digital hierarchy (SDH) network, comprising:

receiving, at a first device coupled to said SDH network, one or more flow-control frames from a second device coupled to said SDH network, wherein each flow-control frame contains a control field that controls a data device coupled to said first device to either stop sending data or start sending data, where said control field is selected based on a comparison of a data volume in a receive cache of said second device to predetermined upper and lower thresholds; and

processing said one or more flow-control frames at said first device to control a data device coupled to said first device to stop transmitting data or start transmitting data;

wherein said processing comprises:

identifying the one or more flow-control frames; and

processing the one or more flow-control frames in a transparent manner according to whether the data device coupled to said first device operates in a full-duplex mode or a half-duplex mode, wherein:

if the data device coupled to said first device operates in a full-duplex mode, each of said one or more flow-control frames is transferred directly to the data device; and

if the data device coupled to said first device operates in a half-duplex mode, the first device executes a control function indicated by the one or more flow-control frames.

26. (Canceled)

27. (Currently Amended) The flow-control method according to claim ~~[[26]]~~ 25, wherein when said first device executes a control function indicated by the one or more flow control frames, executing the control function causes the first device to either transmit or to refrain from transmitting a back pressure signal to said data device.

28.-29. (Canceled)